

AN EXPLORATORY STUDY OF THE PSYCHOMETRIC PROPERTIES OF THE  
HISPANIC BILINGUAL GIFTED SCREENING INSTRUMENT AT GRADES 6-12

A Dissertation

by

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## ABSTRACT

Educators have long been challenged to close the achievement gap which exists between the general school population and linguistically diverse students. However, a disconnect persists between most secondary teachers and culturally and linguistically divergent students. Because of this disparity, the call for equity education becomes more arduous. The absence of culturally and linguistically diverse students in gifted and talented programs is a glaring indication that too few educators have the ability to look beyond their immediate paradigms. One way in which to increase diverse student representation is to provide teachers with additional instruments to assist in the identification of students' gifted tendencies. The Hispanic Bilingual Gifted Screening Instrument (HBGSI) is a tool specifically designed for teachers who may not be aware of cultural differences among themselves and Hispanic students. The goal of this study was to investigate the psychometric properties of the HBGSI with secondary Hispanic students in grades 6-12.

Eleven secondary teachers answered the Hispanic Bilingual Gifted Screening Instrument with their ELL Hispanic students (n=101) in mind. Findings showed a correlation among students identified by teachers as gifted and those who passed the state required reading/language arts test. This study also examined the psychometric properties of the HBGSI within grades 6-12, whereas former studies have included grades kindergarten through fourth grade students. This investigation revealed the eleven components of the instrument can be loaded into three identifying dimensions: a)

*Student Awareness and Initiative*, b) *Tangible and Intangible Student Influences*, and c) *Student Communicative Language*. Exploratory analysis of the HBGSI's psychometric properties examines whether a concurrent validity exists when compared with another non-verbal measurement (NNAT<sup>2</sup>) for giftedness. Implications from this study demonstrated that the screening instrument, HBGSI, may be considered a viable tool to help secondary teachers identify gifted potential among Hispanic English learners.

## DEDICATION

I dedicate this dissertation study to my husband and our two sons. Without their continuous love and support, I would not have been able to complete my degree. I also dedicate this work to my mother, father, and mother in law. I will always appreciate their help and encouragement.

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## CHAPTER I

### INTRODUCTION

The 2001 No Child Left Behind (NCLB) Act, (Public Law PL 107-110) documented academic inconsistencies among cultural groups. NCLB's explicit mandate for addressing instructional inequity was to narrow the achievement disparity among high- and low-performing students, especially the educational discrepancy between minority and nonminority students. Once in the minority, the largest growing student population today is Hispanic (Passel, Cohn, & Lopez, 2011). In this study, focus is on the utility of the Hispanic Bilingual Gifted Screening Instrument (HBGSI) as a tool for educators to recognize gifted potential in secondary Hispanic students who are not native English speakers. More instruments, strategies, and approaches are needed to help teachers recognize intellectual giftedness in our growing diverse student populations (Callahan, 2005; Rothstein-Fisch & Trumbull, 2008). As the stated goal with NCLB, educational inconsistencies among students could decrease as more instruments, such as the HBGSI are made available to educators.

An important distinction to make for this study is that most secondary school districts in Texas do not offer the same type of gifted and talented programs that can be found at the elementary level (Texas Education Agency [TEA], 2012). Indeed, programs are as varied and different as the campuses themselves. It should be noted that there are several avenues of advanced study within secondary campuses, although these may not be labeled as *gifted and talented* [italics added] programs. In most secondary campuses,

Advanced Placement (AP) courses are offered which can lead to college credit. Many satellite secondary campuses serve the purpose of advanced studies in technology, medicine, the arts, and science. Because of these factors, the terms advanced studies and gifted and talented are used interchangeably in my study.

The 2011 Census Bureau counted 52 million Hispanics in the United States, making up 16.7 % of the total population. The nation's Hispanic population, which was 35.3 million in 2000, grew 43% over the past decade. From 2000-2010, the Hispanic population has accounted for 56% of the nation's growth (Cohn, Lopez, & Passel, 2011; Frey, 2011). This increase is also reflected in national school demographics. Cities such as Houston, Los Angeles, Chicago, and New York are the four largest cities where Hispanics are no longer a minority. In Texas alone, 50.8% of the student population in 2011-2012 was Hispanic. The Texas Education Agency (TEA) in 2012, also reported that 837,536 or 16.8% of the total enrollment of students were limited English proficient (LEP). For my study, the term English Language Learner (ELL) is preferred as a more positive representation of a student maneuvering between languages. However, in its published reports, TEA uses the term *limited* [italics added] English proficient (LEP) which can conjure a negative image of deficiency within a student.

The challenge of accommodating English language learners (ELLs) to advanced English fluency is daunting. However, in order for ELLs to participate equally in social and academic events, English fluency is required (Gándera & Rumbreger, 2009). More accurate and reliable identification and measurement practices for gifted potential among students of color are needed in order to minimize bias (Cobley & McKenna, 2011).

Consequently, educators have been seeking research-based programs that support ELLs in their quest for academic excellence, because English learners are often overlooked for gifted programs (Ramos, 2010).

### **Statement of the Problem**

Even though the student Hispanic population has increased in cities across the nation, this *majority minority* [italics added] representation (Almond, 2002) has yet to equal other student populations in accelerated classes or gifted and talented programs offered throughout the nation's public schools. The current underrepresentation of Hispanic students in gifted programs is not a proportionate portrayal of the Hispanic student population (Callahan, 2005; Castellano & Diaz, 2002; Irby & Lara-Alecio, 1996a; LaFontaine, 1987; Reyes, Fletcher, & Paez, 1996). To increase the number of Hispanic, bilingual students in gifted and talented programs, the definition and concept of giftedness among educators should be broadened (Harris, Rapp, Martinez, & Plucker, 2007). Additionally, educators need to receive more tools and training in the areas of gifted identification and teaching strategies (Gentry et al., 2008).

In the 12 years since NCLB has been in effect, the achievement gap between Hispanic bilingual students and White students has widened (DeCuir-Gunby, Taliaferro, & Greenfield, 2010; Donovan & Cross, 2009; Ford & Grantham, 2003; Gay, 2007). The most recent data from The National Center for Educational Statistics (NCES, 2006) show that 3,350 Hispanic students were enrolled in gifted and talented programs compared to 15,896 White students. Emphasizing that the fault lies within the school systems, Ford (2006) cited specifically (a) "the pervasive deficit orientation that prevails

in society and our schools,” (b) “low referral rates of diverse students” by teachers, (c) an almost exclusionary reliance “on tests that inadequately capture the strengths and cultural orientations of these students,” and (d) on “educators lack of understanding cultural diversity” (p. 507). It was discovered in my research that a dearth of reported data exists after 2006 showing secondary ELLs involved in any gifted and talented (GT) programs.

Additionally, in a presentation during the *39th Texas Association of Bilingual Educators* (TABE) conference in 2011, Dr. Omar López furnished some unsettling information regarding ELLs in GT programs. Using the Public Education Information Management System (PEIMS) supplied by the TEA, López created a longitudinal research design (2003-2007). A cohort of 25,079 Hispanic ELL 9<sup>th</sup> grade students were tracked for 4 years until their projected graduation date. He discovered that Hispanic ELLs are about 40 times *less* [italics added] likely to be identified as gifted as compared to Hispanic non-ELLs. In other words, only 0.2% (n=53) of the 25,079 Hispanic ELL ninth grade students in the cohort were identified as gifted (López, 2011).

Further research in Academic Excellence Indicator System (AEIS) for grades 9-12 on the TEA website yielded the following: (a) during the 2009-2010 school year, 11.6% of LEP (TEA’s identification term for ELLs) completed at least one Advanced Placement/Dual Enrollment course, (b) during the 2010-2011 school year, 14.1% of LEP completed at least one Advanced Placement/Dual Enrollment course, (c) the percentage posted for school years 2010 and 2011 for LEP students who took AP/IB tests is *n/a*, (d) the percentage posted for school years 2010 and 2011 for ACT and SAT scores is *n/a*,

and (e) percentages posted for school years 2010 and 2011 in the college readiness indicator in both math and English language arts are 5% and 6% respectively (TEA, 2012). Clearly, enough effort is not being exerted by our schools for ELLs in secondary grades, much less for native Spanish-speaking ELLs. The evidence is shown in the state AEIS category for LEP dropouts: In school years 2010-2011, an average of 23.7% of ELLs that could have graduated within a 4-year program, dropped out. Of the ELLs who were eligible to graduate within a 5-year period, an average of 36% dropped out of high school (TEA, AEIS, 2012). Remedies for these inequities must include teacher training for the ever growing culturally and linguistically diverse (CLD) school population.

A student whose first language is not English is in danger of not receiving specialized educational services (Brody, 2005). Even well-meaning educators may not understand or might overlook potential giftedness in students due to communication barriers, cultural ignorance, or bias (Callahan, 2005). Criterion for gifted identification, which utilizes writing, reading, and oral language skills is, in fact, measuring the efficiency and aptitude in the skills of English writing, reading, and speaking—not giftedness potential (Coleman, 2003; Geisinger, 1992; Gentry et al., 2008). Students who are not fluent in English face these determinations of talent and intellect at a severe disadvantage (Gándara, 2005; Gay, 2007; Gándara & Rumberger, 2009; Haas & Gort, 2009). Evaluations for giftedness and its potential should measure the intended objective being measured and not extrinsic factors (Standards for Educational and Psychological Testing, 1999).

There is a collection of existing assessment practices and testing methods for the evaluation of students with diverse cultural backgrounds and who may be gifted (Joseph & Ford, 2006). However, the interpretation of empirical data from various studies is far from straightforward. Language minority or students of color, are not considered to fit well in the process of evaluation because cultural indicators of giftedness are not a central part of the otherwise one-dimensional view of giftedness prevailing in our society (Ford & Harris, 1994; Harris et al., 2007; Ouyang & Conoly, 2007 Zappia; 1989).

Teachers must be aware of students' cultural and educational background in order to provide equitable assessment measures (Callahan, 2005; Donovan & Cross, 2009). Many educators are unfamiliar with alternative options for assessing students' potential for advanced studies (Gardner, 1993; Gay, 2007; Haas & Gort, 2009).

### **Purpose of the Study**

The purpose of this study was to explore the psychometric properties of the Hispanic Bilingual Gifted Screening Instrument (HBGSI) (Irby & Lara-Alecio, 1996b) at grade levels 6 through 12. The HBGSI could provide another alternative for educators to recognize gifted potential among Hispanic English learners in secondary grades. The current HBGSI has not been tested with secondary students, only with students in grades Kindergarten through fourth.

Two issues prominent in today's educational setting are central to this study: (a) the rising Hispanic ELL population growth within our public schools and (b) the lack of awareness among mainstream teachers regarding second language acquisition and

bilingual assessment (Donovan & Cross, 2009; Garza & Garza, 2010; Frasier, Garcia, & Passow, 1995; Joseph & Ford, 2006). The latter issue brings up important considerations regarding the misinterpretation of test scores and identification of gifted Hispanic youth (Anastasi & Urbina, 1997; Callahan, 2005; Ford, 2005; Geisinger, 1992; Harris, et al., 2007; Rhodes, Ochoa, & Ortiz, 2005; Valencia & Suzuki, 2001).

Because misunderstandings of culture and language contribute to the underrepresentation of Hispanic students in gifted programs (Cohen, 1990; Fry, 2003; Gentry et al., 2008; Irby & Lara-Alecio, 1996a; Ramos, 2010; Torrance, 1977; Zappia, 1989), it is imperative that educators have greater access to ways in which to invite more Hispanic students into public schools' gifted and advanced programs. An increased enrollment in gifted and advanced public school programs could assist college campuses by preparing culturally and linguistically diverse (CLD) students for higher-level curriculum, thus boosting Hispanic college enrollment.

### **Definition of Terms**

Within this study, certain abbreviations and terms are used for describing groups and assessments. The definitions are described below:

#### **Culturally and Linguistically Diverse**

For this study, the term culture refers to the sum of attitudes, customs, and beliefs that distinguishes one group of people from another. Culture is transmitted, through language, material objects, ritual, institutions, and art, from one generation to the next (American Heritage New Dictionary of Cultural Literacy, 2005, p.379).



Culturally and linguistically diverse (CLD) students are present in all classrooms throughout the nation. While the HBGSI is for Hispanic English learners, the term CLD is also applicable to this specific student population.

### **English Language Learner**

An English language learner (ELL) is an active learner of English enrolled in school. Students who face the complex task of learning a second language while learning academic skills (Crawford & Krashen, 2007). The terms ELL and English learners are used interchangeably within my study.

### **Gifted and Talented**

The term gifted and talented (GT) is defined by the U.S. Department of Education (USDE) (1993) in their report, *National Excellence: A Case for Developing America's Talent*:

Children and youth with outstanding talent perform or show the potential for performing at remarkably high levels of accomplishment when compared with others of their age, experience, or environment. These children and youth exhibit high performance capability in intellectual, creative, and/or artistic areas, as well as possess an unusual leadership capacity, or excel in specific academic fields. They require services or activities not ordinarily provided by the schools. Outstanding talents are present in children and youth from all culturally groups, across all economic strata, and in all areas of human endeavor. (p. 26)

As explained above, the term advanced studies will also be used interchangeably with the term gifted and talented, as many secondary campuses do not offer gifted and talented programs, per se.

### **Naglieri Nonverbal Ability Test**

For the purpose of this study, the Naglieri Nonverbal Ability Test-Second Edition (NNAT<sub>2</sub>) was utilized for concurrent validity with the HBGSI. The NNAT is a nonverbal measure of general ability without the requirement of reading, writing, listening, or speaking.

### **Texas Assessment of Knowledge and Skills**

The Texas Assessment of Knowledge and Skills (TAKS) was an annual assessment administered to public school students in Texas until the 2011-2012 school year. It measured skill levels in math, science, social studies, and language arts at grade levels 2-12.

### **State of Texas Assessment of Academic Readiness**

Beginning in the spring of 2012, the State of Texas Assessment of Academic Readiness (STAAR) was implemented within schools to replace the TAKS.

### **Hispanic**

For the purpose of this study, Hispanic was used to refer to a person or persons of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin regardless of race (Humes, Jones, & Ramirez, 2011).

### **Research Questions**

Three research questions guided this study:

1. What are the main factors identified in the Hispanic Bilingual Gifted Screening Instrument (HBGSI) with data from secondary Hispanic English learning students?
2. What is the concurrent validity of the HBGSI, with Naglieri Nonverbal Ability Tests, second edition, (NNAT<sub>2</sub>) when tested with secondary Hispanic English learning students in grades 6 through 12?
3. Is there a relationship between students' identification on HBGSI and their performance on the state mandated assessment in reading/language arts?

### **Significance of Study**

The significance of this study is essential for it may contribute another instrument for secondary teachers to use in the identification process of gifted potential among Hispanic English learners. This study may also furnish pertinent and timely information for teachers about cultural and linguistical trends within the nation's school systems.

Proportionate numbers of gifted and talented students exist in all ethnic, racial, and gender groups (Valdes, 2003; Valencia & Suzuki, 2001; VanTassel-Baska & Stranbaugh, 2007). However, because standardized tests have been traditionally used for gifted and talented measurement, Hispanic students and students learning English have been at a critical disadvantage due to the predisposition of White middle-class bias of such tests (Gándara, 2005; Strip & Hirsch, 2000). In order to alter the identification and classification procedures of continually neglected student populations, paradigm shifts by educators and policymakers are necessary (Donovan & Cross, 2009; Gay, 2007).

Soon, Hispanic students will be the majority ethnicity within the United States' school systems. However, only 12% of Hispanic young adults have graduated from college (Frey, 2010). This inequity must be changed. By determining if the HBGSI is an effective tool to use with Hispanic secondary students, educators may be able to access another resource to increase numbers in advanced classes. The participation in these classes can better prepare high school students to attend college, thus raising the percentage of Hispanic college graduates in our country. Quantitative methodology was utilized in order to uncover factors from within the HBGSI to determine its potential use with secondary students in grades 6-12.

A study of the Hispanic Bilingual Gifted Screening Instrument (HBGSI) can provide educators with a broader awareness of cultural and linguistic diversity among Hispanic youth. This understanding can aid instructors in identifying more Hispanic English learners for gifted and advanced classes at the middle and high school levels. Until this point in time, the HBGSI has only been tested with elementary level students.

Cultural differences among students and educators can have a huge impact on assessment interpretation. For example, there exist certain parameters where test-taking speed is favored and are part of the culture (Anastasi & Urbina, 1997; Sternberg & Davidson, 2005; Wiley & Wright, 2004). Other cultures value reflection and attention to detail while testing, rather than the speed at which performance is measured (DeCuir-Gunby et al., 2010). While most well-known intelligence tests designed for school-aged children or adults measure largely verbal abilities; they can also cover abilities to recognize abstract numerical or other symbols (Anastasi, 1992; Callahan, 2005; Cantu,

1998; Castellano, 2003). Test-givers must be cognizant of the fact that psychometric performance is context dependent, thus the student's background is important to remember when selecting, conducting, and evaluating assessments (Anastasi, 1985; Heller, 2005; Wiley & Wright, 2004).

School officials should confront the cultural, linguistic, and financial challenges placed upon them by the increasing Hispanic student growth (Frey, 2011). Hispanics will provide a burgeoning share of skilled workers in areas that already are encountering shortages such as nursing, computer programming, and biotechnology (DeCuir-Gunby, et al., 2010). As previously noted, only about 12% of Hispanics who were English learners, between the ages of 25 and 29 have graduated from college. This figure is well below that of African Americans, Asians, and Whites (Frey, 2010).

The importance of well-trained testers and construct validity during the testing procedure with Hispanic students cannot be overstated (Sarouphim, 2002; Valdez, 2003; Valencia, 2001). Because construct validity and bias load are some of the characteristics held by tests in the psychometric field, it is relevant to consider evidences of validity when assessing Hispanic students in areas such as criterion-related (concurrent and predictive) content and effectiveness of assessment composition (Donovan & Cross, 2009; Geisinger, 1992; Haas & Gort, 2009).

The HBGSI highlights personal characteristics found within the Hispanic culture (Irby & Lara-Alecio, 1996). School leaders and teachers often assume their personal values, beliefs, and actions are the norm for everyone else in a school setting (Bernal, 2003; Gay, 2007). Because of this narrow view, misinterpretation of scores is common

(Haas & Gort, 2009; Valdes, 2003). The biased and unfair characteristics on standardized tests create an achievement gap, and many culturally and linguistically diverse students consequently get left out of advanced program participation within public schools (Irby & Lara-Alecio, 1996a; Quintero & Cook, 2002; Rhodes et al., 2005).

Hispanic English learners in their teens often enroll in school as immigrants and deserve the opportunity to participate in all school programs (Valdes, 2003; Valenzuela, 1999). According to the National Center for Education Statistics, (2012): The percentage of public school students in the United States who were English language learners (ELLs) was higher in 2009–10 at 10 percent (or an estimated 4.7 million students) than in 2000–01 at 8 percent (or an estimated 3.7 million students).

Because of ELL growth, educational leaders must be diligent when canvassing for student participation in accelerated programs in order to ensure equitable access (Sternberg & Davidson, 2005; Valedes, 1996). Therefore, in the present study, I aimed to determine the validity of using the Hispanic Bilingual Gifted Screening Instrument (HBGSI) with secondary students enrolled in grades 6-12. Another non-verbal assessment often used for identifying giftedness is the Naglieri Nonverbal Ability Test (NNAT). For this study, the HBGSI was compared with the NNAT-Second Edition, for concurrent validity.

Instruments such as the HBGSI assist with closing the cultural disparity between educators and students. By lessening the pedagogical disproportion, the achievement gap can be narrowed as mandated by NCLB 12 years ago (Castellano, 2003; English, 2002).

It is with this goal in mind that I sought to answer the research questions mentioned above. In doing so, another assessment tool would possibly be available to educators for increasing the representation of Hispanic English learners into gifted and talented programs.

### **Limitations, Delimitations, and Assumptions**

There are no prior studies on the use of the HBGSI with secondary Hispanic English learning students in grades 6-12, or other studies reporting similar instruments. Although a larger sample is desirable in this study, this study was related to the sample purposely selected from one small city school district in Texas. The study was conducted among 6-12 grade students within this district. It was assumed that every teacher who participated in the HBGSI answered each question to the best of his/her knowledge about the students.

### **Organization of the Study**

Chapter I of this study includes definitions of terms, the purpose of the study, statement of the problem, research questions, the significance of the study, limitations, delimitations, and assumptions.

Chapter II of this study includes a literature review that examined several issues regarding assessment for gifted and talented students including: theories behind gifted and talented identification, legal mandates regarding assessments, arguments against the singular use of a standardized test for gifted identification, and examination of the bias and cultural disparity among educators and diverse students.

Chapter III of this study includes explanations of the sample, setting, research design, instrumentation, intervention procedure, data collection, data analysis, and a summary.

In Chapter IV of this study, I report the data analysis and summary.

In Chapter V of this study, I present a discussion of findings, limitations, recommendations, implications, and conclusions.



## CHAPTER II

### REVIEW OF LITERATURE

A literature review pertaining to gifted identifiers and assessment methods for Hispanic ELL students uncovered prominent aspects relevant to my study. First, a wealth of literature has concentrated on scientific theories and legal mandates which have influenced gifted education in the country. Second, there is an abundance of reported studies regarding the current theories of talent. The literature also shows inequities of using only IQ tests for identification of gifted students. Studies recommending multiple means of identification and assessments as opposed to a single standardized test was reviewed. However, there is an absence of quality studies examining which tools are valuable for recognizing gifted Hispanic English learners in the secondary grades. Finally, after scrutinizing the literature, it was determined that there exists language bias and cultural disparity among most ELL students and educators. All literature reviewed for my study was with secondary Hispanic ELL students in mind.

#### **Theories of Intelligence**

With such factors as federal and state funding, as well as graduation rates dependent on student testing performance, it is important to examine how intelligence and aptitude assessments became so prominent in our society. The reliance on intelligence investigations began as early as the nineteenth century. Pioneers such as Sir

Frances Galton, Binet, and Terman conducted numerous analyses of the majority population under the auspices of identifying intelligence quotients.

It is revealing to note that Sir Frances Galton was a cousin of Charles Darwin. Darwin's tome, *The Origin of the Species* (1859) proposed that all living species have descended over time through common ancestors. No doubt Galton was influenced by this theory when his research concluded that high intelligence could only be inherited from one's ancestors (Galton, 1869). Galton's method was to count and assess the distinguished relatives of prominent men throughout Europe. According to his theory, when the number of remarkable relatives is greater with a close degree of kinship, a genetic trait is present in a prominent line of descent that is not revealed in other lines (Valencia & Suzuki, 2001). His study resulted in *Hereditary Genius: An Inquiry Into Its Laws and Consequences* (Galton, 1869).

Another prominent investigator into intelligence measurement was the French psychologist, Alfred Binet. In 1905, he developed the first test to measure cognitive skills (Valencia & Suzuki, 2001). This test was designed to predict high achievers and students who would fail in school (Anastasi & Urbina, 1997). Binet was a leader in aptitude analysis and his evaluations are often referred to as the earliest interest in gifted student identification worldwide (Valdes, 2003). Educators are still implementing a form of Binet's testing today with the Stanford-Binet Intelligence Scales (Roid, 2011). Unlike Binet, some researchers believed that one's good fortune depended entirely upon a high IQ score (Minton, 1998).

Stanford University professor Lewis Terman standardized the translated version of Binet's test (Terman, 1916). Terman believed that giftedness was bequeathed upon those children who scored in the top-ranking IQ scores (Wechsler, 1944). The high scorers were recognized as geniuses, while those who scored low were branded *dull* or *retarded* [italics added]. Terman believed the destiny of low scoring students to be one of crime and poverty if they were not incorporated into some type of vocational program (Minton, 1998). In other words, Terman postulated that only students who scored in the top 1% of IQ tests were gifted (Robinson, 1998).

For decades after Terman's research, his view of giftedness went unchallenged by most educators (Sternberg & Davidson, 2005). Characteristics such as artistic ability, memory, and problem-solving skills were generally ignored when evaluating students' talent (Valdes, 2003; VanTassel-Baska & Stranbaugh, 2007). During the fifties, measurement of intelligence and aptitude began to gain prominence in American culture along with the global desire to conquer space.

### **Legal Mandates**

After the Russian launch of Sputnik in 1957, many Americans harbored an uneasy feeling that Russia was moving ahead in terms of science and technology (Valdes, 2003). Not to be left behind, America aimed its attention on the development of school programs that focused on math and science. Congress passed the National Defense Education Act of 1958 (NDEA), to assist college students with scholarships in which to study foreign language, math and science. Hoping to keep our nation's educational system globally competitive, the NDEA was the first example of

comprehensive federal education legislation (U.S. Department of Education, 2012). More legislation concerning education initiatives regarding advanced studies and underserved populations followed in the coming decades. Influences from several federal initiatives regulated growth among gifted programs within the nation's public schools. The first definition of what makes a student *gifted* [italics added] originated within the U.S. government in the early seventies.

Sidney Marland was the Commissioner of Education for the U.S. Department of Health, Education, and Welfare in 1972. Marland commissioned a panel to define criteria for gifted students which is known as *The Marland Report* (1972). The report stated gifted characteristics included: (a) general intellectual ability; (b) specific academic aptitude; (b) creative or productive thinking; (c) leadership ability; (d) visual and performing arts; and (e) psychomotor ability. (Marland, 1972, p. 10). The commission went on to state that utilization of these criteria should comprise a minimum of 3-5% of the total school population. *The Marland Report* is considered a landmark study because it stressed the need to recognize diverse types of skills and aptitudes among students in elementary and secondary grades.

The intent of *The Marland Report* was to expand the awareness of educators and help them realize that giftedness and talent go above and beyond IQ scores (Valdes, 2003). However, schools in the seventies and eighties seldom implemented this inclusive addition to the meaning of giftedness in their assessments and continued to resort and rely only on IQ measurements—thus making no visible change to the majority demographic composition of gifted and talented programs around the nation (Kohler &

Lazarín, 2007; Ramos, 2010). Congress continued to provide jurisdiction for educators in the areas of advanced studies.

A prominent attempt to provide for gifted students occurred in 1988. The *Javits Gifted and Talented Students Education Act* was passed in an effort to replace the one-directional IQ test with multiple assessments. Within the Act, the term gifted and talented defined children and youth "... who give evidence of high performance capability in areas such as intellectual, creative, artistic, or leadership capacity, or in specific academic fields, and who require services by the school in order to fully develop such capabilities" (Javits Gifted and Talented Students Education Act of 1988 P.L. 100-297, Sec. 4130).

However, during the 1980s, a report titled: *A Nation at Risk: The Imperative for Educational Reform* (National Commission on Excellence in Education, 1983) proclaimed that the U.S. Education system was a failure. Standardized scores since the Cold War had gone down instead of up. Panicked, politicians made education a top priority in politics and the media (Bracey, 2003). While standards and testing were emphasized, controversies abounded over anti-multiculturalism (Soto, 1997). Poor results on the report were blamed on minorities and the lack of equal educational opportunities given to all students over the past decades (Castellano & Diaz, 2002).

Even though negativism was directed toward multiculturalism, the *Bilingual Education Act* passed in 1984 and is considered to be the first law to provide funding gifted programs for bilingual students. The *Jacob K. Javits Gifted and Talented Students Education Act* also provided funding towards the research and identification of bilingual

students (Castellano & Diaz, 2002). Unfortunately, these mandates did little to cause a paradigm shift of cultural diversity within gifted education.

Despite the federal definitions and focus for equitable advanced educational programs, a report produced by the U.S. Department of Education (USDE) in 1993 entitled: *National Excellence: A Case for Developing America's Talent*, concentrated on the *quiet crisis* [italics added] of gifted American students' continued neglect within the school systems. Additionally, the report mentioned the lack of culturally diverse students within schools' gifted programs. Research from the paper reported how top students were under-challenged due to preconceived limits or expectations on how talents and abilities are demonstrated. A new national definition was then created within:

Children and youth with outstanding talent perform or show the potential for performing at remarkably high levels of accomplishment when compared with others of their age, experience, or environment. These children and youth exhibit high performance capability in intellectual, creative, and/or artistic areas, as well as possess an unusual leadership capacity, or excel in specific academic fields.

They require services or activities not ordinarily provided by the schools.

Outstanding talents are present in children and youth from *all cultural groups* [italics added] across all economic strata, and in all areas of human endeavor.

(USDE, 1993, p. 26)

Recommendations in the report above also contained the following declaration:

“The nation must support research and demonstration projects working to develop talent in *diverse* [italics added] populations. Schools must eliminate barriers to participation of

economically disadvantaged and minority students in services for students with outstanding talents” (USDE, 1993, p. 27). While the information above concerns federal guidelines, every state has its own recommendations for implementing gifted students identification.

### **Texas Education Codes for Gifted and Talented Students**

There are specific education codes in Texas regarding the identification of linguistically and culturally diverse gifted students (Irby, Lara-Alecio, & Rodriguez, 1999). Upon approval by district school boards, the codes help guide educators to define giftedness and create a uniform identification process within each district. The initial identification/nomination stage requires at least five sources or criteria for recognition of talent (these can be subjective or objective measures), and they can be referred to throughout the year as the students transfer, exit, or enter the gifted and talented program.

The Texas Education Agency (TEA) has posted the Texas State Plan for the Education of Gifted/Talented Students, which was revised in 2009. The plan is comprised of three basic sections, reminding districts that:

- (a) assessment instruments and gifted/talented identification procedures provide students an opportunity to demonstrate their diverse talents and abilities; (b) a flexible system of viable service options provides a research-based learning continuum that is developed and consistently implemented throughout the district to meet the needs and reinforce the strengths and interests of gifted/talented students; and (c) districts

meet the needs of gifted/talented students by modifying the depth, complexity, and pacing of the curriculum and instruction ordinarily provided by the school. (TEA, 2009)

As stated in section (a) above, identification of student talent should occur from an opportunity to *demonstrate their diverse talents and abilities* [italics added]. There is no mention of adhering to a single test score for nominations into advanced school programs.

### **No Child Left Behind**

Today, schools are still under the auspices of the No Child Left Behind Act. Begun in 2001, the enactment of No Child Left Behind (NCLB) required students in every school to show grade level knowledge in content area achievement tests. Until the 2011-2012 school year, the content area achievement tests in Texas were Texas Assessment of Knowledge and Skills (TAKS). In 2012, districts began implementing the State of Texas Assessments of Academic Readiness (STAAR) assessment in grades 3-8, and End of Course (EOC) tests in grades 9-12. In my study, results from TAKS will be analyzed. The importance of high scores on students' testing cannot be over-emphasized. Test scores affect both state and federal school funding.

If districts' students fail to show adequate yearly progress in the TAKS test or fail to pass the EOC tests, sanctions and money from the USDE can be withheld. As a result, schools have begun spending more money to provide assistance to students performing below grade level. This extra attention to low performing students is hoped to raise high stakes test scores (VanTassel-Baska & Stranbaugh, 2007). In order to avoid



federal monetary forfeitures, most school districts have shifted toward providing more time, attention, resources, and policies on lower performing students (Wiley & Wright, 2004). Increasingly, students who demonstrate exceptional abilities or the potential for elevated talent are pushed aside due to the increased focus on low-performing students. With budget constraints and teacher shortages, gifted students are often neglected (Quintero & Cooks, 2002). As a result, gifted programs among school districts have suffered (Kaplan, 2004). While it is important to help underachievers, it is equally crucial not to forget the development of the gifted. This discrepancy can have devastating effects. A recent study found that 20% of the nation's dropouts tested in the gifted range (Colangelo & Davis, 2002). Many of these dropouts are Hispanic bilingual secondary students (TEA, 2012).

### **Secondary Hispanic Bilingual Students**

Due to funding cutbacks of gifted and talented programs nationwide, it is more important than ever that more tools are available to teachers in order to recognize an often silent, overlooked student population: secondary Hispanic English learners. While some gains were made in equity education and civil rights before NCLB in 2001, twelve years later, our Hispanic English learners are still at a disadvantage; whether taking high stakes tests or being nominated for advanced study programs (Solórzano, 2008). High stakes tests mandated by NCLB are only administered in English to secondary students. Hispanic English learners may know the content of the test, but be unable to understand the questions (Quintero & Cooks, 2002). This can lead to poor test scores. Scores which have traditionally been the only attribute used by educators to nominate students for

more rigorous study. Thus, in order to increase the number of Hispanic ELL population in secondary gifted or advanced programs, more tools besides test scores, are necessary for teachers to recognize talent within their classrooms.

Conclusions from the literature synthesis about intelligence theories and legal mandates are straightforward. The initial forays into IQ measurement did not consider persons outside the realm of most testmakers' experiences and/or culture; thus, the lack of diversity among students considered talented. Legal mandates from the eighties and nineties made some progress towards demanding equitable inclusion and identification of culturally diverse gifted students. The congressional decrees have all but been ignored, as the majority of students within the programs today are White.

However, due to both federal and state legal directives, school districts are continually challenged to diversify and augment programs from lowly represented student groups. It is critical to the focus of my study to remember that federal and state definitions are not referring to *intelligence*, but *talent* [italics added]. This broader awareness of giftedness suggests a new layer that allows students to cultivate their potential and let it evolve. Results from a single test, in English, are unjust as a measurement of talent for a secondary Hispanic English learner. The above mandates also mentioned that students from all culture and language groups should be represented in gifted programs. Because of this, there is a need to examine alternative assessment tools to increase diversity among students within gifted programs.

## **Current Theories about Giftedness**

In recent years, psychologists and educators have begun to recognize that culturally diverse students are vastly underrepresented in advanced school programs. These educational leaders are proponents of multi-dimensional assessments for identifying talent in students.

As evidenced from the federal mandates for educational gifted awareness, the definition of giftedness been discussed and examined for generations (Irby & Lara-Alecio, 1996a; Valdes, 2003; Valencia & Suzuki, 2001; VanTassel-Baska & Stranbaugh, 2007). Federal definitions for giftedness have evolved since 1970 and the means in which students have been recognized by their school districts for advanced educational programs should be influenced by these federal definitions (Ford & Grantham, 2003).

Giftedness, ideally, should refer to characteristics such as creativity, motivation, and memory, terms that were missing in the original definitions arising from studies conducted by Binet, Galton, and Terman (Donovan & Cross, 2009; VanTassel-Baska & Stranbaugh, 2007). The contemporary view of giftedness encompasses a more inclusive, circumstantial, and subjective point of view. However, measuring giftedness from these perspectives can be more intricate and difficult when compared to traditional means, such as reliance on one individual test (Valdes, 2003, VanTassel-Baska & Stranbaugh, 2007). Proponents of contemporary gifted identification methods are many, but they all advocate educators using multiple assessments.

A modern leader in the modern view of giftedness is Joseph Renzulli (1986), who challenges the traditionalists from the nineteenth century and believes that

giftedness is not genetically inherent. It is Renzulli's conviction that gifted and talented programs in schools should offer students opportunities and programs to demonstrate and/or to develop their potential. Renzulli (1986) developed the idea of the three interlocking rings of giftedness: (a) above average ability, (b) task commitment, and (c) creativity. This outlook described an assertive and interactive approach to giftedness, which also included the environment as a necessary component (Castellano & Diaz, 2002).

Other researchers who have postulated theories of gifted identification beyond traditional means are Tannenbaum, Gardner, and Sternberg (Valdes, 2003). They were not satisfied with merely administering an IQ test. These scholars argue that giftedness is in motion, continually growing (Sherman, 1997; Valdes, 2003) and that the construct of intelligence is problematic to calibrate.

For example, A.J. Tannenbaum, (1983) views giftedness as an interplay between five different factors: (a) general ability, (b) special ability, (c) non-intellective facilitators, (d) environmental influences, and (e) chance. However, in his *Triarchic Theory of Intelligence*, Robert Sternberg (1990) uses the metaphor of mental self-government. He describes people's intellectual styles to functions of government: (a) legislative style, (b) judicial style, and (c) executive style. In another point of view, the search for talent within multiple personality traits: (a) linguistics, (b) mathematical/logical, (c) spatial, (d) musical, (e) kinesthetic, (f) interpersonal, (g) intrapersonal, and (h) naturalist is referred by Howard Gardner (1993) as *The Multiple Intelligence Theory*.

In spite of the progressive theories regarding gifted identification, most schools still depend on one indicator of talent, which is typically an IQ or high stakes test (Anastasi & Urbina, 1997) which puts Hispanic English learners at a disadvantage to showcase their talent.

### **The Exclusive Use of an IQ Test is Inappropriate**

Gathered from the literature is the second pertinent point in regards to talent assessments: the reliance on one measurement, such as an IQ test, has been identified as the main cause of ethnic homogeneity in gifted and talented programming (Anastasi, 1985; Anastasi, 1992; Anastasi & Urbina, 1997). This practice is acknowledged as undesirable (Bernal, 2002a; Callahan, 2005; Sarouphim, 2002), especially for English learning students because most tests are in English.

The use of a single, English, standardized test, such as an IQ test, excludes English language minority students who possess diverse talents (Cantu, 1998). The writers of standardized tests generally have been White and middle-class while the students taking the test are assumed to have the same knowledge and experience base (Castellano & Diaz, 2002; Sherman, 1997). This gap in test-taking knowledge penalizes culturally and linguistically diverse students from accessing gifted programs (Cantu, 1998).

Traditionally, a score on a verbal intelligence test has been the common measurement used for placement of English learners in the gifted and talented programs (Plucker, Callahan, & Tomchin, 1996). Both IQ tests and states' high stakes tests requires a demand of writing, oral, and reading skills in English. Any test that *uses* these

skills is *measuring* [italics added] those skills (Gándara & Rumberger, 2009; Gonzalez, Clarke, & Bauerle, 2000; Heller, 2005). Cognitive assessments in the student's native language should be utilized, when available (Castellano & Diaz, 2002; Donovan & Cross, 2009; Geisinger, 1992; Valencia & Suzuki, 2001). To ensure efficacy, the norms must be suitable for the individual student, not only based on their home country, but also on their linguistic history (Harris et al., 2007). Also, if the student has not had the same amount of language exposure as the normed group, the results may not be definitive of the student's abilities (Rhodes et al., 2005). Tests of cognitive ability and standardized tests used solely to identify gifted students is generally considered unsuitable for ethnic and linguistic minorities and has been referenced as the basis of underrepresentation of culturally and linguistically diverse students in gifted courses of study (Bernal, 2002b; DeCuir-Gunby et al., 2010; Sarouphim, 2002; Harris et al., 2007).

### **The Use of Multiple Criteria**

The use of multiple criteria and nontraditional measures of achievement is largely suggested for the identification of underrepresented student groups in gifted and talented programs, especially for Hispanic English learners. Authentic procedures include, but are not limited to: (a) classroom observations, (b) checklists, (c) rating scales, (d) portfolio evaluations, (e) teacher nominations, (f) problem-solving based assessments, (g) interviews with parents and communities, (h) self-identification, and (i) alternative testing (Castellano & Diaz, 2002; Heller, 2005; Ouyang & Conoly, 2007; Ramos, 2010; Sarouphim, 2002).

The best identification practices for underserved populations involve multiple criteria in a variety of ways and a variety of time periods (Coleman, 2003). The importance of using culturally appropriate instruments with language minority students cannot be overemphasized (Marin & Marin, 1991). Cultural appropriateness means more than just a translation into a standardized instrument (Rhodes et al., 2005). An assessment researcher/developer must immerse oneself into the culture. The following psychometric properties are to be considered when assessing bilingual Hispanic children: (a) factor analysis, (b) reliability, and (c) validity (Cohen, 1988).

The use of multiple assessments, as well as nominations from peers, teachers, parents and the students themselves, seems to be a practical solution to solving secondary Hispanic student underrepresentation within gifted and talented programs. Regarding these students, the use of non-verbal, non-traditional, linguistic, and culturally sensitive instruments should be utilized for assessment (Irby, Hernandez, Torres, & Gonzales (1997). It is the teachers' responsibility to establish multiple sources of assessments such as portfolios, observations, and background data (Bermúdez & Márquez, 1998). Best practices include the use of a variety of assessment tools that cover a wide range of areas such as music, art, and language (Cantu, 1998; Castellano, 2003). Also important is the encouragement of family involvement, parent support groups, and respect for family's culture (Warger & Burnette, 2000).

Within each school district, an administrator is generally appointed to seek out the best talent measurements for use within their schools. However, most educators still believe gifted identification revolves around the traditional assessment for identification:

a high score on an IQ measurement or high stakes test (Ford & Grantham, 2003).

Whether this practice continues because of ignorance, laziness, or understaffing is dependent on each district.

### **Language and Cultural Disparity among Secondary Hispanic ELLs and Educators**

The third important point garnered from the literature is the existence of a cultural discrepancy between secondary Hispanic English learners and educators. When secondary Hispanic English learners enter school, they must learn not only English, but also their grade level subject matter at the same time. Many times students arrive years behind in their new school's curriculum standards. Secondary Hispanic ELL students often have been out of school because they needed to work in their home country (Valdes, 2003). It is customary for many secondary Hispanic ELL students have jobs after school to help support their families (Valedez, 1996; Valenzuela, 1999). All of these important factors are often missed by secondary teachers (Fry 2002; Calahan, 2005; Gándara, 2005; August & Calderon, 2006; Bernal, 2006) due to cultural and language differences.

Learning a second language is a cognitive task in itself (Bialystok & Hakuta, 1994; Bialystok et al., 2004). Gifted English learners are usually unable to express themselves well in English, and so their talents are unknown or undiscovered because of their language limitations and not due to their lack of talents (Cohen, 1990; Gándara & Rumberger, 2009). This is another reason why all children benefit when multidimensional assessment procedures are used to explore their interests, abilities, and learning styles (Kloosterman, 1997; Reyes et al., 1996). Unfortunately, learning a



second language is not coveted nor regarded as an advantage by many in education (Valdes, 2003).

In a qualitative study conducted in Texas (Garza & Garza, 2010), cultural disparity was demonstrated between elementary Hispanic ELL students and their teachers. The participants were four White female elementary teachers working in an urban school attended by primarily bilingual, Hispanic students. The principal of the school was asked to identify four *successful* [italics added] teachers of whom the researchers could study. The data were collected through in-depth interviews, observations, and documents. The goal of the study was to understand how White, middle-class female teachers understand their role in social equity as it relates to balanced education for all children. Even though they were identified on their campus as *successful* teachers of Hispanic ELL students, the results of the researchers' study showed that all four of the teachers participated in what is called subtractive schooling (Valenzuela, 1999). The teachers took away the students' cultural and linguistic pride (Garza & Garza, 2010). They failed to honor the students' diverse beliefs and realities. The teachers in this study were deemed successful based on the number of their students who passed the standardized tests, which was accomplished by continually displaying assimilationist strategies and behaviors in the classrooms. Even though they professed to "*just teach kids*" (p. 198) and "be called to teach *these kids*" [italics added] (p. 203), the teachers in this study failed to recognize, honor, and acknowledge their students' beliefs, perceptions, language, and realities (Garza & Garza, 2010).

The point of Garza and Garza's (2010) research underscored the fact that while student populations continue to diversify, the majority of teachers entering classrooms are overwhelmingly White, middle class and frequently do not have a grasp on Hispanic culture and language. There is a void in the research about teachers who are effective with underrepresented students, especially secondary students (Weisskirch & Alva, 2002). The teachers in the example above, are seen by others on their campus as caring individuals who help minority students navigate through the educational system and build resiliency while still maintaining their cultural identity (Garza & Garza, 2010). However, by encouraging Hispanic students to adapt or assimilate into a campus' differing cultural status quo, teachers may be reducing the very characteristics that make these students successful.

The dominating culture of each school system excludes students based on culture, color, and language. Marginalization remains a fact for students, no matter how much they adapt (Gay, 2010; Garza & Garza, 2010).

Due to the inherent language obstructions encountered at school, Hispanic English learners have fewer opportunities to be recognized by teachers for behaviors customarily attributed to gifted and talented students (Aguirre, 2003; Gonzalez & Ayala-Alcantar, 2008). Essentially, English learning students' talents will appear in ways that are established within. Examples of talent potential are culturally defined and entrenched (VanTassel-Baska & Stranbaugh, 2007). The identification process of English learners should focus on a wider concept of giftedness that includes nontraditional approaches, and considers one's culture (Bernal, 2002b).

When speaking of cultural diversity within classrooms, Harris et al. (2004), wrote that educators must receive multicultural awareness training and the need for using culturally sensitive instruments:

... we must find ways to authentically assess the strengths, that is the gifts, of these capable students. At this time, nonverbal tests hold a great deal of promise for identifying such students - but one test or one type of test cannot possibly measure the many types of intelligences and intellectual capital possessed by these students. (p. 23)

### **Responsibilities of the Teacher**

Once students are fairly identified as gifted, teachers can learn to differentiate curriculum and instruction in their classrooms and to implement gifted education strategies, across all content areas (Menken & Antunez, 2001). Some gifted students drop out of high school because of lack of engagement and success in school (Fry, 2003; Holleran & Jung, 2005). Many gifted students underachieve in school, but this underachievement can be reversed if interventions are implemented (August & Calderón, 2006; Slavin & Cheung, 2003). The question which begs to be answered is: “What do educators need in order to stimulate students to the best of his/her potential?” And in the case of my study, “What do educators need in order to stimulate secondary Hispanic bilingual students to the best of his/her potential?” The literature search for best methods and practices yielded few answers. However, it is

very clear that the only equitable avenue is the availability of multiple assessments to evaluate student talent.

Most studies concerning the identification of secondary Hispanic ELL gifted students are limited with few empirical evidence (Valencia & Suzuki, 2001; Valenzuela, 1999). The need is too great to not include more ELL representation in gifted and talented programs (Sternberg & Davidson, 2005; Ramos, 2010). Research has shown a few promising instruments that can help increase ELL student numbers in gifted programs (Callahan, 2005). Other studies have focused on alternative methods of assessments, such as portfolios, checklists, nominations, and observations (Harris et al., 2007). Along with teacher training, various assessment instruments can offer a more inclusive alternative to assess Hispanic bilingual students for gifted programs (Colby & McKenna, 2011). While state and federal mandates must be followed by educators, each district has its own responsibility to provide identification, recognition, and development opportunities for all students to reach their potential.

### **Summary of Literature**

The review of literature demonstrated that moving into the 21<sup>st</sup> century, there exists a broadened awareness of the underrepresentation of diverse students in gifted and talented programs. However, students continue to be pressured, by both society and peers, to fit in between linguistic and cultural groups. How talent is exhibited might be distinct to each culture and unlike the majority of test creators, who are White and middle class (Baldwin, 1991).

After examination of the theories and legal mandates regarding student talent development, it can be noted that education is still a long way from transferring best and equitable practices into policy. There exists a void of testing instruments available to educators for gifted identification with the students' culture in mind.

Current researchers have voiced the need for more assessment tools to help educators overcome bias as well as identify advanced potential among culturally and linguistically diverse students. These studies underscore the need for more instruments which can assist teachers identify talent and aptitude among diverse student populations, such as secondary Hispanic bilingual students.

Finally, it is important to point out that of what little research does exist, the findings attest to a cultural disparity among diverse students and mostly White majority of educators, especially in secondary grades. This review of literature led to the conclusion that more identification tools are needed to increase diversity in gifted programs. With these factors in mind, tools such as the HBGSI could be a valuable asset in the goal of enlarging secondary Hispanic ELL student representation within advanced and gifted programs.

### CHAPTER III

#### METHODOLOGY

The fundamental goal of this study was to test the research questions which entailed: 1) depicting the main factors within the HBGSI, 2) the convergent validity of the HBGSI with the NNAT<sub>2</sub>, and 3) to discover a relationship between HBGSI performance and the students' state reading/language arts assessment. In order to accomplish these objectives, independent instruments were utilized. The methodology applied to test the research questions is presented in this chapter. The chapter is arranged in four sections: (a) selection of the participants, (b) instrumentation, (c) data collection, and (d) data analysis.

#### **Selection of Participants**

In purposive sampling, participants are selected based upon certain criteria (Trochim, 2006). In the present study, a purposive sample provided the means to investigate a specialized student population within a small city in central Texas. The researcher sought and received approval from the selected school district to offer both the NNAT<sub>2</sub> and HBGSI to students and teachers respectively, as well as access the students' reading/language arts state test results. Assurances of confidentiality for all participants involved were assured.

For the purpose of this study, a total of 101 ELL students, male and female, were selected from one middle school and one high school within a central Texas school district. The specific middle and high schools were chosen from the particular district

because the student demographic closely mirrors that of the state of Texas' Hispanic school population as shown in Table 1. The participants consisted of Hispanic students in grades six through twelve, who qualified to be in the district ELL program. All students are Hispanic and Spanish is their first language. None of the students have been identified by the district as gifted and talented.

Table 1  
*Texas' Academic Education Indicator System 2011-2012*

| <b>Location</b>   | <b>Texas</b> | <b>District</b> | <b>High School</b> | <b>Middle School</b> |
|-------------------|--------------|-----------------|--------------------|----------------------|
| Hispanic Students | 50.8%        | 51%             | 48.8%              | 55.9%                |
| Hispanic ELLs     | 16.8%        | 18.2%           | 6.9%               | 11.8%                |

Source: Texas Education Agency (2012)

As mentioned in Chapter I, the following questions were the focus of this study:

1. What are the main factors identified in the HBGSI with data from secondary Hispanic English learning students?
2. What is the concurrent validity of the HBGSI, with the NNAT<sub>2</sub> when tested with secondary Hispanic English learning students in grades 6 through 12?
3. Is there a relationship between the HBGSI overall score and students' performance on state mandated assessment in reading/language arts (TAKS/STAAR)?

Because of available access to the chosen schools' data, a convenience sample of three high school teachers and eight middle school teachers from the two campuses were asked to participate in the screening instrument located on the HBGSI website:

<http://teachbilingual.com/>. With their Hispanic ELL students in mind, the teachers were asked to answer the HBGSI online with the purpose of investigating the psychometric properties: (a) reliability and (b) concurrent validity. The software program within the HBGSI ran the calculations and provided scores for each student. It also stored the information and determined the mean score for each teacher's group of students. Using the mean, a cutoff score was established for a splitting point among that ELL students who could be considered for further gifted evaluation. The HBGSI consists of 77 items and uses a 5-point Likert scale. Teachers answered questions regarding the characteristics of their student, by rating the following: 5 – Student always exhibits behavior/characteristics; 4 – Student often exhibits behavior/ characteristics; 3 – Student sometimes exhibits behavior/ characteristics; 2 – Student seldom exhibits behavior/characteristics; and 1 – Student never exhibits behavior/characteristics.

The maximum possible raw score an individual student can obtain is 385, if every statement about a student is answered with the number 5. If all the statements about a student are answered with the number 1, the lowest score will be 77, indicating the range for this instrument is 308.

### **Instrumentation: The Hispanic Bilingual Gifted Screening Instrument (HBGSI)**

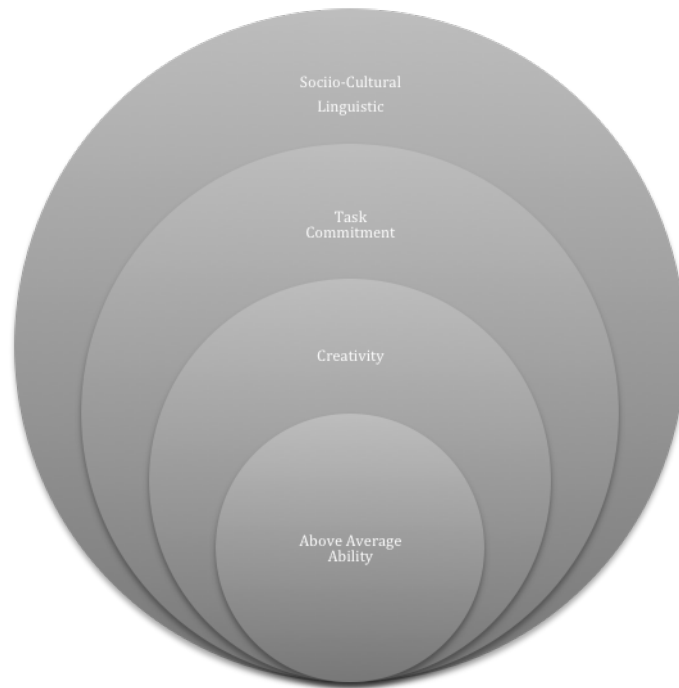
The HBGSI is an inclusive instrument developed by Irby and Lara-Alecio (1996a). This instrument was designed to assess Hispanic students in grades K-4<sup>th</sup> grades. The purpose of the HBGSI is to provide an extra measurement in the nomination process for gifted programs, specifically with Hispanic students in mind.



The Hispanic Bilingual Gifted Screening Instrument (HBGSI) was modeled after Renzulli's description of giftedness (Irby & Lara-Alecio, 2003). Renzulli (1986) has written that his *Three-Ring Conception of Giftedness* consists of the following characteristics: (a) above average ability (not necessarily high or talented in lesson learning or cognitive aspect), (b) task commitment (determination, motivation, hard work, dedicated practice, self-assurance), and (c) creativity (problem solving or original idea development). All students who exhibit such traits should be provided with an educational environment that allows various opportunities from which to cultivate talent or the potential for talent (Matthews & Foster, 2005; Valdes, 2003).

The HBGSI has adopted the Renzulli's concept and added a fourth characteristic: a socio-cultural-linguistic aspect (Figure 1) to encompass the other three (Lara-Alecio & Irby, 2003). This model for educators offers an objective identification tool for Hispanic students among the student population.

Figure 1  
*Student Characteristics in HBGSI*



The graphic in Figure 1 displays the student characteristics within the HBGSI. The instrument's encompassing component of Socio-Cultural and Linguistic awareness envelops the other three for a holistic diagnosis of the student.

The HBGSI began with 90 items in 1992. After several revisions, the number of items was reduced to 78. The screening instrument today now has 77 items; one item was deleted after further investigation and analysis determined it added little or no value (Irby & Lara-Alecio, 2003). Items are measured using a 5-point scale asking if the

student exhibits a specific characteristic: 5 is “always,” 4 is “ often,” 3 is “sometimes,” 2 is “seldom,” while 1 refers to “never” (Irby & Lara-Alecio, 1996a).

Over 400 characteristics of the Hispanic culture were narrowed from an extensive review and study of literature. Eleven categories were created within the instrument: *Social and Academic Language, Cultural Sensitivity, Familial, Motivation for Learning, Collaboration, Imagery, Achievement, Support, Creative Performance, Problem-Solving, and Locus of Control*. Research was based strictly on Hispanic-gifted students and is not intended to be generalized to other populations (Irby & Lara-Alecio, 1996a).

In Figure 2 below, a snapshot of the HBGSI shows sample statements for teachers to evaluate students. Next, a sample student score is calculated. Using this method, certain students are identified for possible further evaluation based upon the instrument’s calculation.

Figure 2  
Snapshot of the HBGSI

**Top Screenshot: Social and Academic Language Cluster**

| Cluster Title                | Questions within a Social and Academic Language Cluster | Key |
|------------------------------|---|-----|
| Social and Academic Language | 1 Is an emergent reader in the native language          | 5   |
|                              | 2 Is an emergent writer in the native language          | 5   |
|                              | 3 Is a proficient speaker in the native language        | 5   |
|                              | 4 Is an attentive listener in the native language       | 5   |

Score for each question:  
 5= Always exhibits behavior/characteristics  
 4= Often exhibits behavior/characteristics  
 3= Sometimes exhibits behavior/characteristics  
 2= Seldom exhibits behavior/characteristics  
 1= Never exhibits behavior/characteristics

**Bottom Screenshot: Summary Table**

| Hispanic Bilingual Gifted Screening Instrument |                             |            |
|--|-----------------------------|------------|
| Social and Academic Language                   |                             | 20         |
| Cultural Sensitivity                           |                             | 10         |
| Familial                                       |                             | 35         |
| Motivation for Learning                        |                             | 20         |
| Collaboration                                  |                             | 65         |
| Imagery  | Total Score of all Clusters | 15         |
| Achievement                                    |                             | 70         |
| Support  |                             | 20         |
| Creative Performance                           |                             | 25         |
| Problem Solving                                |                             | 50         |
| Level of Control                               |                             | 30         |
| <b>Total</b>                                   |                             | <b>360</b> |

Buttons: Home, Add Another Student, Print Report

## Administrative Procedure

The HBGSI is accessible online (Irby & Lara-Alecio, 1996b) to educators and anyone who would like to view more information about the instrument at

www.teachbilingual.com. There is a 30-day free trial period available. Teachers log onto the website, create their own classroom, and enter the names of students. After creating a class roster, the teachers can answer the questions for each student. The software runs calculations and provides scores for every student. It stores the information for each teacher and is available for editing anytime online. The mean of the classroom is determined after all the students have been entered. This mean score is used to determine the cutoff score. This score then establishes a splitting point between Hispanic students who will be recommended for further gifted testing.

### **HBGSI Background**

The HBGSI is based on Renzulli's (1986) definition of giftedness. This definition was adopted as the foundation upon which the instrument was developed and used to accommodate the Hispanic bilingual gifted student as "... one who has above average intelligence (IQ), task commitment, and creativity that is located within sociocultural-linguistic characteristics" (Irby & Lara-Alecio, 1996a, p. 6).

A foundational study that described the characteristics of Hispanic students and could be used for screening Hispanic-gifted students (Marquez et al., 1992) along with a study that showcased the perceptions of the Mexican-American community about the characteristics of Hispanic-gifted students (Bernal & Reyna, 1974) served as the foundation upon which the HBGSI was based. Observable characteristics of the Hispanic community and perceptions among Mexican Americans were investigated in both of these studies regarding gifted Hispanic students.

During an exploratory study, an agglomerative hierarchical cluster analysis was completed by Irby and Lara-Alecio (1996b) and the results confirmed the existence of 11 clusters. Sixty-one elementary kindergarten through fourth grade bilingual teachers volunteered to complete the HBGSI. The results produced a Cronbach's alpha with coefficients ranging between .62 to .91. These revealed a fairly high correlation between the characteristics depicted by the HBGSI and those considered as attributes of Hispanic-gifted bilingual students.

Further studies showed that the HBGSI was an effective screening instrument that discriminated at  $p < .0001$  between those students referred to gifted education and those who were not referred (Irby et al., 1997). An exploratory and confirmatory factor analysis study was conducted with this screening tool on a sample of elementary bilingual students in the Houston area.

A correlational study was conducted in order to investigate the properties of the HBGSI with the Naglieri Nonverbal Ability Test (NNAT). Ten bilingual K-4<sup>th</sup> grade classrooms made a sample of 175 students who participated in the study. The Pearson correlation showed coefficients as high as .50 with  $p < .01$  indicating a statistically significant positive correlation between the two instruments (Irby et al., 1999). Another study by Irby et al. (1999) demonstrated the reliability coefficient of the HBGSI. Cronbach's alpha was reported to be .99, based on only 34 items of the HBGSI.

## **HBGSI Clusters**

Eleven clusters were identified in previous research (Irby & Lara-Alecio, 1996a) as contained in the HBGSI. These clusters are described as attributes of potentially gifted Hispanic bilingual elementary school students (Lara-Alecio et al., 1997).

The first cluster, *Social and Academic Language*, refers to reading, writing, listening, and speaking in the native language. The second cluster is *Cultural Sensitivity*, which indicates a student's appreciation of his/her heritage. The third cluster is *Familial*, which recognizes the relationship between the student and his/her parents, parental roles, authority, and respect. Cluster number four is *Motivation* and refers to learning and the students' desire to learn. The fifth cluster, *Collaboration*, deals with the ability of students to work with others, while the sixth cluster, *Imagery*, deals with the student's imagination, verbal or written. The seventh cluster, *Achievement*, addresses the same indicator that mainstream students have. The eighth cluster, *Support*, is exemplified by the teacher helping in the areas of assessment and language development. The ninth cluster, *Creative Performance*, is creative productivity in the arts. The tenth cluster, *Problem Solving*, is indicated by cognitive functions and actions in problem solving. Finally, the eleventh cluster, *Locus of Control*, is portrayed by the level of effort that the student produces by completing tasks (Irby & Lara-Alecio, 1996a).

## **NNAT<sub>2</sub> Background**

Historically, assessments have strived to demonstrate concurrent validity when measuring ability and academic achievement. The relationship between test scores and other related variables provide important information. As explained in the NNAT<sub>2</sub>

*Manual for Technical Information and Normative Data* (2008), evidence for the NNAT<sub>2</sub>'s internal consistency resulted from using Kuder-Richardson procedures. The Kuder-Richardson Formula 20 reliability coefficients have been reported for the NNAT<sub>2</sub>, along with the means, standard deviations, and standard errors of measurement. The data determined that the NNAT<sub>2</sub> has sufficient reliability for the expectations for which it is designed: a non-verbal assessment for recognizing student talent.

Evidence of the NNAT<sub>2</sub> test-retest stability for the Naglieri Ability Index Scores was acquired using a sample of almost 2,700 students ranging in ages 5-17. Using Pearson's product-moment correlation, the NNAT<sub>2</sub> scores showed good stability across time.

The NNAT<sub>2</sub> was also given to 221 ELL students in grades K-12. Because the NNAT<sub>2</sub> is non-verbal, the scores were similar for the matched control group and the ELL group of students. Group differences created a small effect size (.22).

There are two administration options available. One is a paper and pencil version and another is an online version. For this study, students used the paper and pencil version.

The paper and pencil version is organized into seven booklets (labeled Levels A-G). Each of the different levels was designed for a specific grade level, K-12. Each level incorporates 48 items that are appropriate for students at the grade or grades for which that level is intended. The number of test items each child answers correctly on each level is used to obtain the Naglieri Ability Index (NAI), which is a standard score set to have a mean of 100 and a standard deviation of 16.



Scoring of the NNAT<sub>2</sub> was done by hand using the NNAT Hand Scoring Guide. The steps involved were: (a) compute the raw score, (b) convert the raw score to a scaled score based on the NNAT2 level administered, (c) convert the scaled score to a Naglieri Ability Index (NAI) scale based on the child's age, and (d) look up the percentile and stanine scores that correspond to the NAI score.

### **Data Collection**

Teachers were asked to complete the HBGSI online for their Hispanic ELL student(s) within a 3 week window. During this time period, the NNAT<sub>2</sub> was administered to the same students. Students' results from the state mandated assessment in reading/English language arts were also obtained during this time. After the data were collected, a table describing the scores on all assessments was created. It was anticipated that there would be instances of no responses or random guesses on the HBGSI from teachers. This is due to the fact that secondary teachers rarely see their students more than one period a day, and may feel as though they do not know students well enough to respond to certain questions on the screening instrument. One example of this is the screening statement that asks the teacher to rate the student's artistic interest or ability. A secondary teacher of math or science will probably feel inadequate to answer that, due to the fact that opportunities for art projects are limited in that particular class.

### **Data Analysis**

To address research question 1: *What are the main factors identified in the HBGSI with data from secondary Hispanic English learning students?* A multivariate analysis was performed in the form of Factor Analysis and Principal Components.

To answer research question 2: *What is the concurrent validity of the HBGSI, with the NNAT<sub>2</sub> when tested with secondary Hispanic English learning students in grades 6 through 12?* To determine the concurrent validity of the two assessments, a correlation analysis was run. Effect size in terms of  $r^2$  was reported to determine the magnitude of correlation.

Finally, to resolve research question 3: *Is there a relationship between students' identification on HBGSI and their performance on the state mandated assessment in reading/language arts?* Non-parametric and parametric correlation analysis was performed to examine the relationship between teacher ratings on HBGSI and students' performance on the state required reading/language arts test during the previous school year. For independent samples, a t-test was also conducted to compare the differences between the HBGSI scores from students who met the state expectations and those who did not meet the state expectations.

### **Summary**

The goal of this study was to validate the HBGSI as an aide for educators to identify more secondary Hispanic ELL students for gifted programs within grades 6-12. Ramos refers to this dilemma as she writes in the *Journal of Cultural Diversity*:

In light of current research, it is more glaring than ever that achievement gaps still exist between Hispanic and White youth. . . . test bias must be acknowledged and the use of nonverbal measures given greater credence as well as the replacement of standardized tests with culturally sensitive measures such as the HBGSI. (Ramos, 2010, p. 24)

By examining the concurrent validity of the HBGSI with the NNAT<sub>2</sub>, this study introduced the HBGSI as a possible tool for teachers to understand and validate the gifted potential of secondary Hispanic English learners. The current atmosphere of bias among the majority of White teachers and their culturally diverse students is unacceptable. With more tools at hand, teachers have the opportunity to broaden representation of diverse students among gifted programs.

The development of non-verbal tools, such as the NNAT<sub>2</sub> and the HBGSI, can provide an avenue for Hispanic English learners to showcase their talent. The convenience and ease with which these assessments are given can be an advantage for both students and teachers.

## CHAPTER IV

### PRESENTATION AND ANALYSIS OF DATA

The goal of this exploratory study was to examine the psychometric properties of the Hispanic Bilingual Gifted Screening Instrument (HBGSI) at grade levels 6-12. The major purpose of my study was to investigate the usefulness of the HBGSI as a tool for secondary teachers to utilize when identifying gifted potential among Hispanic ELL students. The answers to the research questions posed in previous chapters were achieved by: (a) examining the outcomes of the teacher opinions within the HBGSI, (b) examining the concurrent validity of the HBGSI's calculations with the students' NNAT<sub>2</sub> results, and (c) also examining the possible relationship between the students' identification on the HBGSI and their performance on the state mandated assessment in reading/English language arts.

#### **Descriptive Statistics**

The Texas Academic Education Indicator System (AEIS) for the years 2011 and 2012 was used to gather ethnic distribution percentages. Because of the close resemblance to the state's Hispanic population distribution, the particular district and schools for this study were chosen. Within state, district and campuses, Hispanic students were the majority.

#### **Testing the Research Questions**

In this section the three proposed research questions are addressed. The first research question asked what are the main factors identified in the Hispanic Bilingual

Gifted Screening Instrument (HBGSI) with data from the secondary English learning students. A multivariate analysis was performed, in the form of Factor Analysis and Principal Components.

The second research question, which concerns the concurrent validity of the HBGSI with the Naglieri Nonverbal Ability Test, second edition, (NNAT<sub>2</sub>) when tested with secondary Hispanic English learning students in grades 6 through 12, required a correlation analysis to be performed.

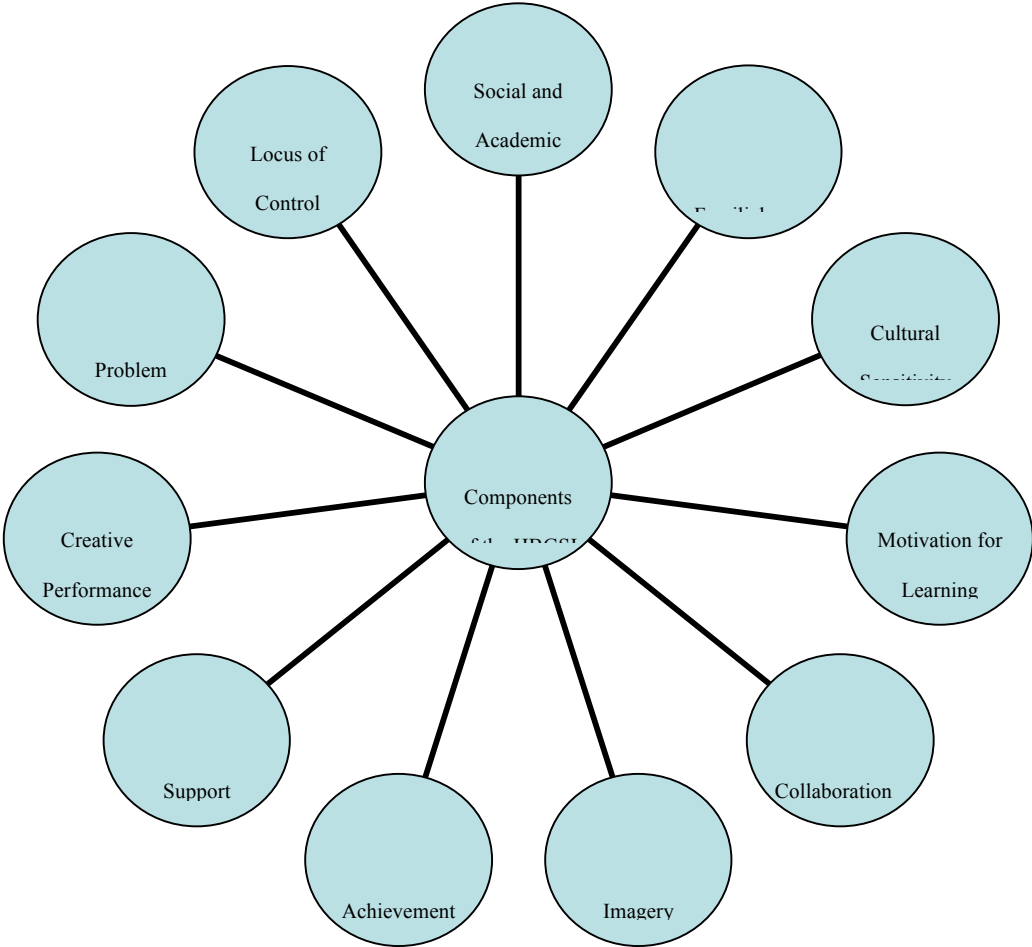
Finally, for the third research question about the relationship between students' identification on HBGSI and their performance on the state mandated assessment in reading/language arts, a t-test for independent samples was used.

### **Research Question One**

*Question one: What are the main factors identified in the Hispanic Bilingual Gifted Bilingual Screening Instrument (HBGSI) with data from secondary Hispanic English learning students?*

The HBGSI consists of eleven components. Each of the eleven components displays three to fifteen student characteristics, per component. Teachers are asked to evaluate their students using descriptors within each component. The components are shown in Figure 3 below:

Figure 3  
*Components of the HBGSI*



The HBGSI calculates the mean score for each teacher's class input and determines which students are above the mean for further gifted identification. The ease with which scores are determined is an important characteristic of the assessment for educators to consider. Several teachers expressed appreciation regarding this feature during the course of the study. Many classroom teachers have limited time for planning and creating lessons. The ease with which the HBGSI provides student data is an important consideration for many teachers.

In this study, the reliability of the scale was assessed and found to be fairly reliable, with a Cronbach's Alpha of 0.928, which is well above the common 0.7 threshold. This indicated that the HBGSI can be considered a reliable scale for secondary Hispanic English learners. Also, a Factor Analysis was performed, using Principal components and Varimax rotation, as seen in Table 2.

Table 2  
Factor Analysis of HBGSI

| Factor Analysis of HBGSI | Mean        | Standard Deviation | Analysis N  |
|--------------------------|-------------|--------------------|-------------|
| Component 1              | 19.13       | 1.968              | 101         |
| Component 2              | 13.99       | 1.664              | 101         |
| Component 3              | 30.67       | 4.996              | 101         |
| Component 4              | 16.51       | 4.086              | 101         |
| Component 5              | 54.81       | 9.418              | 101         |
| Component 6              | 12.15       | 2.5                | 101         |
| Component 7              | 62.36       | 11.073             | 101         |
| Component 8              | 21.03       | 3.407              | 101         |
| Component 9              | 19.85       | 4.279              | 101         |
| Component 10             | 41.24       | 7.168              | 101         |
| Component 11             | 34.25       | 5.619              | 101         |
| Rotated Component Matrix | Component 1 | Component 2        | Component 3 |
| Component 1              | 0.113       | 0.217              | 0.93        |
| Component 2              | 0.717       | 0.114              | 0.525       |
| Component 3              | 0.49        | 0.766              | 0.093       |
| Component 4              | 0.476       | 0.701              | 0.245       |
| Component 5              | 0.669       | 0.669              | 0.129       |
| Component 6              | 0.131       | 0.836              | 0.219       |
| Component 7              | 0.605       | 0.743              | 0.09        |
| Component 8              | 0.728       | 0.358              | 0.202       |
| Component 9              | 0.819       | 0.334              | 0.05        |
| Component 10             | 0.786       | 0.51               | 0.055       |
| Component 11             | 0.63        | 0.619              | 0.274       |

Extraction Method: Principal Component Analysis

Rotation Method: Varimax with Kaiser Normalization

a. Rotation converged in 7 iterations

The KMO statistics was 0.917, which indicates that factor analysis is very adequate. On the other hand, the sphericity assumption was not met,  $X^2=1168.00$ ,  $p < .001$ . When using the criterion of extracting only factors with an associated eigenvalue of greater than 1, only one factor was extracted with 68.68% of variation explained.



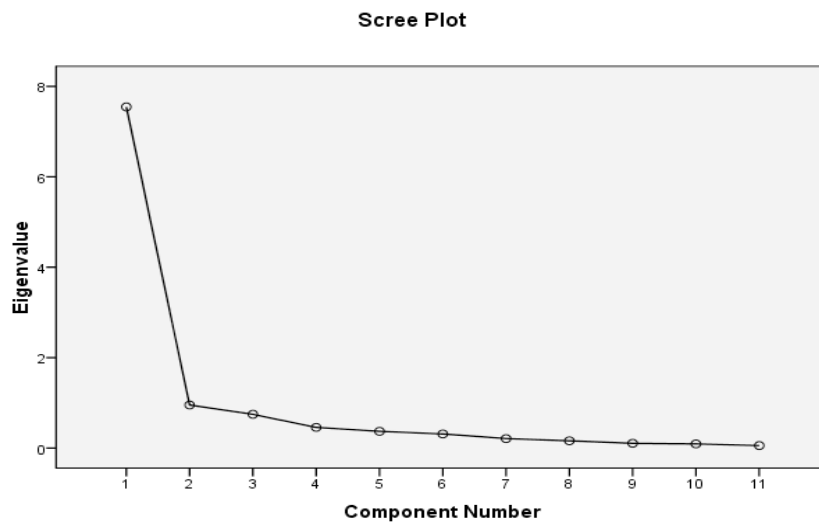
Hence, because the variance explained by the first extracted factor was not too high, two more factors were extracted, which together with the first factor extracted explained 84.04% of the variance, as displayed in Table 3. Also displayed below in Figure 4, are the eigenvalues of the third demension of the HBGSI.

Table 3  
*Total Variance Explained*

| <b>Component</b> | <b>Initial Eignvalues</b> |                          |                         | <b>Extraction Sums of Squared Loadings</b> |                          |                         |
|------------------|---------------------------|--------------------------|-------------------------|--|--------------------------|-------------------------|
|                  | <b>Total</b>              | <b>% of<br/>Variance</b> | <b>Cumulative<br/>%</b> | <b>Total</b>                               | <b>% of<br/>Variance</b> | <b>Cumulative<br/>%</b> |
| 1                | 7.546                     | 68.597                   | 68.597                  | 7.546                                      | 68.597                   | 68.597                  |
| 2                | 0.952                     | 8.654                    | 77.25                   |  |                          |                         |
| 3                | 0.746                     | 6.784                    | 84.035                  |  |                          |                         |
| 4                | 0.456                     | 4.146                    | 88.181                  |  |                          |                         |
| 5                | 0.37                      | 3.36                     | 91.541                  |  |                          |                         |
| 6                | 0.311                     | 2.83                     | 94.371                  |  |                          |                         |
| 7                | 0.209                     | 1.9                      | 96.272                  |  |                          |                         |
| 8                | 0.16                      | 1.456                    | 97.727                  |  |                          |                         |
| 9                | 0.105                     | 0.952                    | 98.679                  |  |                          |                         |
| 10               | 0.091                     | 0.825                    | 99.504                  |  |                          |                         |
| 11               | 0.055                     | 0.496                    | 100                     |  |                          |                         |

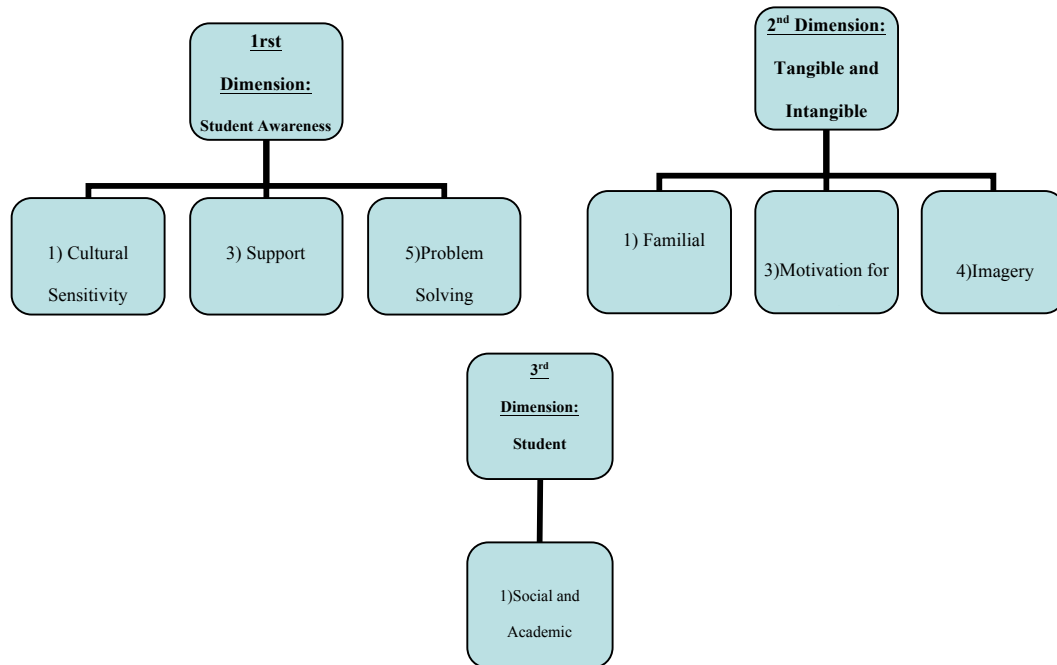
Figure 4  
*Scree Plot of Eigenvalues of the Third Dimension*

As shown below, one factor was extracted with 68.68% of variation explained.



The results indicated that the HBGSI is composed of three dimensions, as seen in below in Figure 5. The first dimension was loaded by the components c2, c5, c8, c9, c10, and c11. The second dimension was loaded by the components c3, c4, c6, and c7. Finally, the third dimension was loaded by component c1.

Figure 5  
*The Three Dimensions of the HBGSI*



## Research Question Two

*Question two: What is the concurrent validity of the HBGSI, with the Naglieri Nonverbal Ability Tests, second edition, (NNAT<sub>2</sub>) when tested with secondary Hispanic English learning students in grades 6-12?*

In order to measure the concurrent validity, the correlation between the HBGSI and NNAT<sub>2</sub> was computed as seen in Table 4. It was found that Pearson's correlation was  $r = -.567$  ( $p < .001$ ), whereas Spearman correlation was  $r_s = -.609$  ( $p < .001$ ) which

indicated that there was a significant degree of correlation between the two assessments.

With an effect size of  $r^2 = 0.321$ , which is moderately large, most students who were

evaluated on the HBGSI had corresponding high scores on the NNAT<sub>2</sub> assessment.

Table 4

*Correlations between HBGSI and NNAT2*

|  |                     | <b>HBGSI Total<br/>Score</b> | <b>NNAT2 % Rank</b> |
|--|---------------------|------------------------------|---------------------|
| <b>HBGSI Total<br/>Score</b>                               | Pearson Correlation | 1                            | -0.567**            |
|  | Sig. (2-tailed)     |                              | 0                   |
|  | N                   | 101                          | 101                 |
| ** Correlation is significant at the 0.01 level (2-tailed) |                     |                              |                     |
|  | Spearman's rho      | 1                            | -0.609**            |
|  | Sig. (2-tailed)     |                              | 0                   |
|  | N                   | 101                          | 101                 |
| ** Correlation is significant at the 0.01 level (2-tailed) |                     |                              |                     |

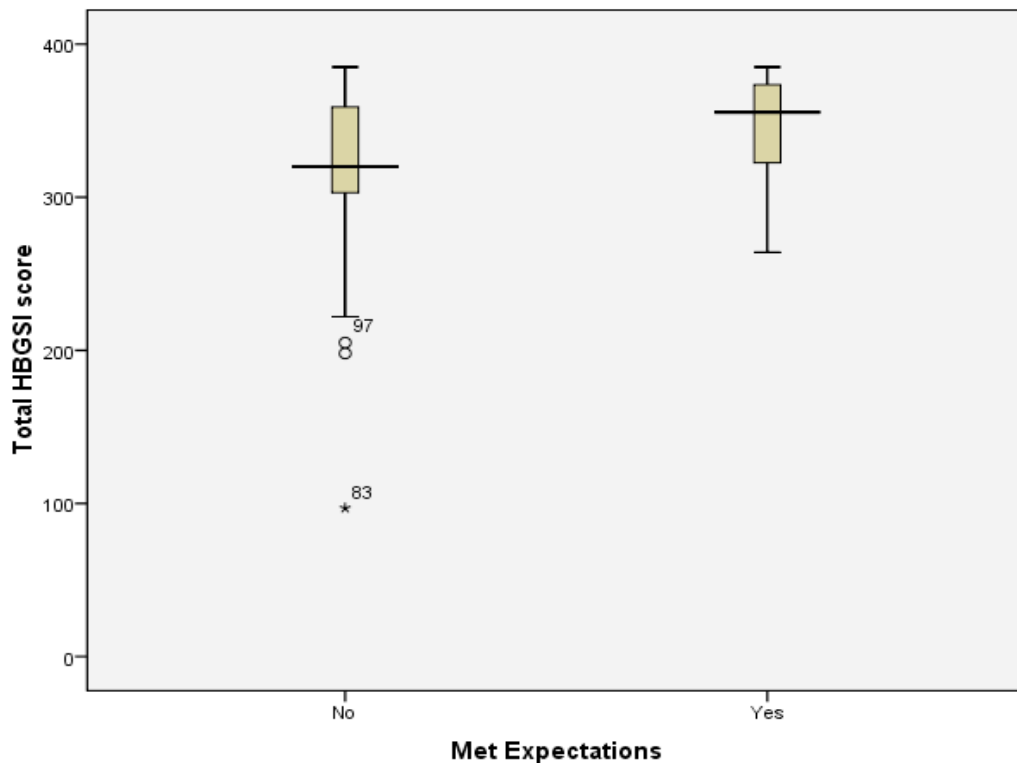
### Research Question Three

*Question three: Is there a relationship between students' identification on HBGSI and their performance on the state mandated assessment in reading/language arts?*

Participants in this study were in grades 6-12. Each grade level conducted a specific state assessment. Thus, the students' performance was measured using different instruments and scales. All assessments are analyzed by the students' ability to meet

state expectations in reading/language arts in their particular grade level. A dummy variable to assess whether or not the expectations were met was utilized (1 = meets expectations of the grade level reading/language arts test, 0 = does not meet the expectations of grade level reading/language arts test). As seen in Figure 6, a t-test for independent samples was performed, with the HBGSI as the dependent variable and the students' performance on the state assessments (1 = meets expectations, 0 = does not meet expectations) as the independent variable. It was observed that normality was met for the group that meets the expectations ( $p = .080$ ), but was not met for the group that did not meet the expectations ( $p = .005$ ).

Figure 6  
*T-test of HBGSI Scores and Students Meeting State Expectations*



The results of the t-test indicate that the variances can be assumed to be equal ( $F = 2.122, p = .148$ ), and that the difference in HBGSI scores is significantly higher for the group that met the expectations of the state mandated assessment than the group that did not meet the expectations of the state assessment,  $t(99) = 2.196, p = .030$ . In fact, the group that met the expectations of the state mandated assessment had a significantly higher HBGSI score than the other group. It was observed that there were a couple of extreme outliers, so it was convenient to confirm the above test results using a Mann-Whitney test as seen in Table 5. The Mann-Whitney test confirmed that the difference was significant ( $z = -2.135, p = .033$ ).

Table 5  
*Mann-Whitney Test*

|                          | <b>N</b>         | <b>Mean Rank</b> | <b>Sum of Ranks</b> |
|--------------------------|------------------|------------------|---------------------|
| <b>Total HBGSI Score</b> | 0 No 77          | 47.53            | 3659.50             |
|                          | 1 Yes 24         | 62.15            | 1491.50             |
|                          | <b>Total 101</b> |                  |                     |

### Summary

In this chapter, results from statistical tests which were used to answer the research questions were presented. Analysis of each statistical breakdown was addressed according to the questions of this study.

Results from the first quantitative research question revealed the sphericity assumption was not met,  $\chi^2 = 1168.00, p < .001$ . Because the variance explained by the

first factor extracted was not very high, two more factors were extracted, which together with the first factor extracted explained 84.04% of the variance. The eleven components from the HBGSI could be divided into three main aspects. The first dimension was referred to as *Student Awareness and Initiative* and consisted of components c2, c5, c8, c9, c10, and c11. The second dimension consisting of components c3, c4, c6, and c7 was referred to as *Tangible and Intangible Student Influences*. The third dimension was loaded by one component, c1, and was identified as *Student Communication*. Using Cronbach's Alpha, the reliability of the scale was found to be a very reliable assessment tool for ELL Hispanic secondary students.

With an effect size of  $r^2 = 0.321$ , the HBGSI and the NNAT2 were found to have a significant degree of correlation, which was the focus of the second research question.

Finally, the relationship between students' identification on the HBGSI and their performance on the state required reading/language arts test was examined. The results of the t-test indicated that the variances can be assumed to be equal, and the difference in HBGSI scores was for students who met the state expectations on the annual test.

The next chapter will present and analyze the summary, discussion, and conclusions of the study.

## CHAPTER V

### SUMMARY, DISCUSSION, AND CONCLUSIONS

The presentation and analysis of data were reported in the preceding chapter. This chapter is comprised of a summary of the study, discussion of the findings, implications for practice, recommendations for further research, and conclusions. The purpose of this investigation was to broaden the concepts that have already been studied in regards gifted and talented identification. The goal has been to provide another tool for secondary teachers working with Hispanic ELL students. Because of the practically non-existent Hispanic ELL representation in gifted and talented school programs, the study of the HBGSI as a secondary tool is relevant and timely.

#### **Summary of Study**

The purpose of this study was to measure the psychometric properties of the HBGSI and to determine if it is a valid tool for teachers to identify potential giftedness among Hispanic English learners. Through quantitative research, I also sought to determine that the HBGSI could aid teachers who may lack an understanding of their students' cultural and linguistic diversity.

The Hispanic Bilingual Gifted Screening Instrument (HBGSI) is an online tool. Classroom teachers are able to access the instrument and answer questions specifically designed with Hispanic students in mind. Irby et al., (1996b) developed explicit categories of statements to which teachers respond using a Likert scale of 1-5. Teachers reply to the screening instrument with their Hispanic students' personalities in mind.



From there, the HBGSI determines a mean for the class and offers the teacher a list of students who could qualify for more gifted identification assessment.

The study included eight middle school and three high school teachers responding to the screening instrument with 57 middle school students and 44 high school students respectively. All the students were Hispanic and enrolled in the district's English learning program. The ethnicity of the teachers was White, except two, who were Hispanic.

### **Discussion of Findings**

The research questions from this study were answered quantitatively using data obtained from the eleven components creating the HBGSI.

#### **Research Question One**

*What are the main factors identified in the Hispanic Bilingual Gifted Screening Instrument (HBGSI)?*

It was determined that the HBGSI's eleven components could be composed of three dimensions: (1) *Student Awareness and Initiative*, (2) *Tangible and Intangible Student Influences*, and (3) *Student Communication*.

Spanish speaking English learners generally have a difficult time expressing their knowledge, as most teachers (especially in secondary grades) do not speak the native language of the students (Cohen, 1990; Gándara & Rumberger, 2009). At the same time, the third dimension of the HBGSI, *Student Communication*, can be the easiest for classroom teachers to evaluate. Problems in understanding might occur if the student tries to express knowledge in Spanish, and the teacher only speaks English.

The first and second dimensions identified from the factor analysis were: (1) *Student Awareness and Initiative*, and (2) *Tangible and Intangible Student Influence*. Even though these characteristics are more difficult to assess, it is imperative that students be evaluated for giftedness based on several types of assessments, not merely on an IQ test given in English (Anastasi, 1985, 1992; Anastasi & Urbina, 1997). Such practice is recognized as inappropriate (Bernal, 2002a; Callahan, 2005; Sarouphim, 2002), especially for English learning students.

### **Research Question Two**

*What is the concurrent validity of the HBGSI, with Naglieri Nonverbal Ability Tests, second edition (NNAT<sub>2</sub>) when tested with secondary Hispanic English learning students in grades 6 through 12?*

As evidenced by the review of literature, there is a glaring lack of Hispanic English learners enrolled in gifted and talented school programs. This is especially the case in the secondary grades (Academic Excellence Indicator System, Texas Education Agency, 2012). It was important to discover the concurrent validity of the HBGSI with a national benchmark, such as the NNAT<sub>2</sub>. The NNAT<sub>2</sub> test-retest stability for the Naglieri Ability Index Scores was acquired using a sample of almost 2,700 students ranging in ages 5-17. Using Pearson's product-moment correlation, the NNAT<sub>2</sub> scores showed good stability.

Just as the findings for research question one revealed the HBGSI to be a reliable assessment for secondary Hispanic English learners, answers for the second research question showed certain concurrent validity between the NNAT<sub>2</sub> and the

HBGSI. This is profound because the NNAT<sub>2</sub>, which is a revision of the NNAT (Naglieri, 1997), has a sizable base of research, especially for the assessment of culturally and linguistically diverse populations (Naglieri & Ford, 2003). The NNAT<sub>2</sub> items were designed to ensure fairness across gender, race, and ethnicity (Naglieri, 2008). When correlated with the NNAT<sub>2</sub> data, the HBGSI seems to be a reliable tool for secondary teachers to recognize gifted potential in Hispanic ELL students.

### **Research Question Three**

*Is there a relationship between students' identification on HBGSI and their performance on the state mandated assessment in reading/language arts?*

In light of the fact that the state assessments are in English, and that English learning students must meet expectations by passing these state assessments before they graduate high school, this question is substantial. By examining the data, evidence showed that ELL students who met the state expectations on the reading/language arts tests had significantly higher HBGSI scores than the students who did not. It should be remembered that these tests are in English, Hispanic ELL students' second language. Research in linguistics, educational psychology, and sociology sheds a positive light on second language acquisition and shares these points: (a) fluent bilingualism is associated with higher cognitive development and (b) fluent bilingualism is associated with higher academic performance and higher self-esteem in adolescence (Collier & Thomas, 2004; Maddux, Adam, & Galinsky, 2010). In recent years, researchers have discovered a correlation between potential talent and bilingualism (Maddux et al., 2010; Mechelli et al., 2004; Ricciardelli, 1992; Yoshida & Smith, 2005), so it is not surprising that some

secondary English learning students are able to enroll in school from their native country and quickly acquire English and curriculum content.

Learning English is a very unique, personal process within each individual. No two students acquire a second language at the same rate or degree. Care must be taken with secondary English learners. If they do not acquire English as quickly as some of their peers, they might not get the credit they deserve for creativity, incentive, motivation, and other gifted characteristics. The HBGSI can be substantial addition to a secondary educator's toolbox in providing equitable and inspiring student learning.

### **Implications for Practice**

This study is timely as the Hispanic student population is the largest growing student population (Passel, Cohn, & Lopez, 2011). However, Hispanic students, especially English learners, are not proportionately represented in gifted and talented programs. Studies show only 12% of Hispanic students have graduated college (Frey, 2010). More tools are necessary to enable teachers to recognize characteristics of giftedness within this student population (Callahan, 2005; Rothstein-Fisch & Trumbull, 2008). The data have shown the HBGSI to be a viable option for educators to increase the above population within gifted programs.

These findings can possibly affect administrators, teachers, and school policies with regards to cultural and linguistic diversity in advanced education. One major dependent factor within this theme is governmental immigration reform. Although a controversial subject, at the time of this writing, the current presidential administration seems to be moving in a positive direction towards allowing undocumented immigrants

to continue higher education without fear of deportation. The numbers of Hispanic English learners should increase once this happens. Conversely, the numbers of Hispanic students, born in the United States, have a growing representation of English learning students. Means of gifted identification are critical for both groups.

For educational administrators, this study provides another reasonably priced instrument which can be used for gifted identification within this specialized population. With larger gifted representation, attendance rates will increase, due to the fact that students' interest in academics grows (Shaunnessy et al., 2007; Valencia & Suzuki, 2001). As research question three demonstrated, teachers' input on their students' giftedness correlated with students who met expectations on the state assessment in reading/language arts. In other words, the group of students within this study who were identified as potentially gifted also met state testing expectations. Because studies point out that a large number of dropouts are students who could be identified as *gifted* [italics added], it is important that students' needs are met.

This study is also relevant for classroom teachers. The convenience of the HBGSI is that it does not require any scoring or statistical expertise. The program will automatically display student scores and determine the mean, which can give teachers a good indication of who should be recommended for further observations. By answering questions about each pupil, the screening instrument generally took each teacher 15 minutes per student. Because state and federal mandates require multiple determinations for gifted referral, the HBGSI is a reasonable, convenient addition to existing assessments.

### **Recommendations for Further Research**

The goal of this study was to investigate the psychometric properties of the HBGSI with secondary Hispanic students in grades 6-12. Data was collected to test three research questions related to this goal. The findings from this information, while significant, have some limitations. The HBGSI was developed for grades kindergarten through fourth. One limitation of the findings is that many of the screening instrument's statements do not pertain to a content - oriented secondary class period. Typically, secondary teachers spend one class period (45-55 minutes) a day with their students. Because of this, many teachers did not feel like they had a good perspective on some of the screening instrument's statements regarding their students. For example, question number fifty-five, in the *Creative Performance* category states: "Exhibits creativity in movement, dance and other physical activity." A secondary science teacher would more than likely never have an opportunity to observe this student characteristic as would a self-contained elementary classroom teacher. Because of this discrepancy, many teachers answered with a "best estimate" on several statements. It must be considered that the scores would have possibly been different if each teacher answered the screening instrument's statements based on specific observations within their content area.

On the other hand, the HBGSI contains several statements which reach across grade levels and academic content, such as number seventy-three within the *Locus of Control* category: "Has effective test-taking skills". In addition to these types of statements, it would be valuable for development of more content specific responses, or

perhaps make the screening instrument more generic with fewer choices pertaining to situations outside the secondary classroom of which the teacher might have no idea.

There have been several studies done in the last few decades describing the lack of cultural awareness among the majority of teachers, most of whom are White. With the quickly growing Hispanic population, more research is recommended into teacher training and development of ethnic and sociological histories. This will not be a simple task. A variety of data collection methods should be used. Qualitative studies can be used to outline specific relationships among the variables. Case studies, along with teacher and student interviews, while exploring cultural paradigms would be valuable. The time for challenging the hegemonic monolingual, White culture of educational leadership has come.

The next recommendation for further research is the need for teacher training in language acquisition strategies across all grade levels and content areas. It has been documented how rapidly the Hispanic English learning population is growing. Growth is also occurring within other ethnicities where students need to acquire English in order to graduate high school. There have been theories and trends in second language acquisition introduced to teachers in the recent past, such as: Sheltered Instruction Observation Protocol (SIOP); structured immersion; ELL pull-out programs; ELL class periods; to name a few. There still exists a minority of teachers (as well as school districts) who truly understand and follow a sound instructional approach to their ELL students within the classroom. This is especially evident in secondary classrooms. ELL students are generally in a 'sink or swim' school situation, which leads to feelings of

invisibility, frustration, and hopelessness. As a result of the cultural imbalance between student and teacher, there remains little or no secondary Hispanic ELL representation within gifted and talented programs.

### **Conclusions**

The findings in this study expanded the work of previous researchers who have analyzed data in the area of the HBGSI and its use with elementary students. This study examined the psychometric properties within grades 6-12, whereas former studies have included grades kindergarten through fourth grade students. This investigation revealed that the eleven components of the instrument can be loaded into three identifying dimensions: (1) *Student Awareness and Initiative*, (2) *Tangible and Intangible Student Influences*, and (3) *Student Communications*. Another assessment of the HBGSI's psychometric properties revealed a concurrent validity when compared with another non-verbal measurement for giftedness. In this study, the NNAT<sub>2</sub> was utilized for correlation purposes. Finally, the study revealed that students who met the state standards on the annual reading/language arts assessments also scored higher on the HBGSI.

The literature regarding English learners indicated that multiple assessments should be utilized when canvassing for gifted potential. Unfortunately, most school districts still regard the passing of state- mandated content assessments or IQ tests (both of which are in English) as the only indication of talent. New practices and tools are needed for teachers to recognize talent and giftedness among culturally and linguistically diverse students, who have not been proportionally represented. Within this study, the



HBGSI has been shown to be a viable tool which secondary teachers may use when assessing Hispanic ELL students for gifted and talented programs as well as advanced study programs.

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